

Can Steelhead Trout Migrate in the San Lorenzo River?

Teacher Guide

Guiding Question	How does water level affect steelhead trout's ability to migrate?
Students will be able to:	• Describe the life cycle and migration of a steelhead trout. • Demonstrate typical water levels in the San Lorenzo River based on seasonal weather patterns. • Articulate how low water levels affect steelhead trout migration and reproduction. • Communicate about water conservation solutions and protecting steelhead trout.
Supports Content Standards	Next Generation Science Standards • 3-LS1-1: Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death • 3-ESS2-1: Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season. Common Core Standards/ELA/Literacy • Language: CCSS.ELA-LITERACY.RI.3.1, CCSS.ELA-LITERACY.RI.3.2, CCSS.ELA-LITERACY.RI.3.3, CCSS.ELA-LITERACY.W.3.1, CCSS.ELA-LITERACY.W.3.2
<u>Vocabulary</u>	Migration, life cycle, habitat, estuary, hydrograph, life stage
Social and Emotional Learning support	Each lesson starts with a 2-3 minute mindfulness activity guided by CWC staff based at the San Lorenzo River.
Registration	To register, please fill out this registration form

Decide how students will write their thoughts



Our Guiding Question
How does water and other steelhead trout's ability to migrate?

**Option 1: print
out journal**



Name: _____ Date: _____

I notice, I wonder
After watching the video of the fish swimming, write down your ideas.

I noticed (I saw)	
I wondered (I have a question about)	
Why do you think the fish are swimming upstream?	
Write down what you know about fish.	

**Option 2:
download and
use on computer**



**Option 3: use
class journal**

[Click here for the student journal](#)

Suggested Pacing Guide (see overview of each lesson below)

It is recommended that you [make a copy of the Google Docs](#) to share with your students. This will ensure that students will have access to this in Google Classroom.

Week	Lesson #	Format
1	1	Live Virtual Visit with CWC Educator
1	2	Asynchronous Google Doc Student Guide (make a copy, then share) Seesaw
2	3	Live Virtual Visit with CWC Educator
2	4	Asynchronous Google Doc Student Guide (make a copy, then share) Seesaw
3	5	Live Virtual Visit with CWC Educator
3	6	Asynchronous Google Doc Student Guide (make a copy, then share) Seesaw
4	7	Asynchronous Google Doc Student Guide (make a copy, then share) Seesaw
4 or 5	Optional	Live Virtual Visit: Watershed Rangers Ceremony

Lesson #1 ENGAGE (week one)

**Live Virtual Visit
30 minutes**

1. Answer a few questions about what you already know.
2. Watch a video of steelhead and salmon swimming upstream.
3. Share what they notice and wonder.

[Live Virtual Visit
Educator Guide](#)

4. Create a KWL chart for what they know about steelhead trout.

Lesson #2 EXPLORE 1 (week one)

Asynchronous

30 minutes

Make a copy then share

[Google Student Guide](#)

[Seesaw](#)

1. Scavenger hunt! Explore the San Lorenzo River either virtually or in-person to observe where fish live.
2. Draw a picture of where fish live

Lesson# 3 EXPLORE (week two)

Live Virtual Visit

30 minutes

[Live Virtual Visit Educator
Guide](#)

1. Listen to a story to visualize how steelhead trout migrate to and from the ocean as they grow older.
2. Rewatch video of fish swimming upstream. Reflect on/update their answer to “why are the steelhead trout going upstream?”
3. Expand upon their model to draw direction arrows for the direction steelhead trout migrate.

Lesson# 4 EXPLORE (week two)

Asynchronous

30 minutes- 1 hour

Make a copy then share

[Google Student Guide](#)

[Seesaw](#)

1. Observe steelhead trout in different life stages in a brief video.
2. Read about the different life stages.
3. Add life stages and facts to their life stage model.

Lesson# 5 EXPLORE (week three)

Live Virtual Visit

30 minutes

[Live Virtual Visit Educator
Guide](#)

1. Build a model to explore how water level affects migration.
2. Use a hydrograph to learn about changing water levels.
3. Identify which seasons and river levels are best for the migration of steelhead trout.
4. Review lesson #6 and 7.

Lesson# 6 EXPLAIN (week three)

Asynchronous

30 minutes

Make a copy then share

1. Answer the guiding question.
2. View a video explaining migration and water levels.
3. Identify water saving tips.

[Google Student Guide](#)
[Seesaw](#)

Lesson# 7 ELABORATE/EVALUATE (week four)

Asynchronous
30 minutes- 1 hour
Make a copy then share
[Google Student Guide](#)

1. Do an action project to save water.
Option 1: Teacher others to save water (comic strip or video)
Option 2: Do a home water use survey and pledge to save water.

OPTIONAL: WATERSHED RANGER CEREMONY (week four or five)

Live Virtual Visit
15 minutes

1. Take a post-survey to share what they know.
2. Celebrate and get sworn in as Watershed Rangers.

EVALUATION

Teacher Evaluation

To help us improve the materials and also assess our impact on science and environmental education in our count, please complete the following two feedback forms. Your input is very much valued!
[CWC Feedback form](#)
[SCCOE Feedback form](#)

Student Evaluation

The Coastal Watershed Council and Santa Cruz County Office of Education is seeking to learn about students' experiences and perspectives of nature. Please share the two below forms for students to complete with their families:
[CWC Student Survey](#)
[SCCOE Student Survey](#) ([English](#) or [Español](#))

Links from Hyperdoc

[Lesson #1 Live Virtual Visit Educator Guide](#)
[Lesson #3 Live Virtual Visit Educator Guide](#)
[Lesson #5 Live Virtual Visit Educator Guide](#)

[Pre-survey Google form](#)
[Post-survey Google form](#)
[Student Journal](#)
[Steelhead trout swimming upstream video](#)
[Visiting the San Lorenzo River Instructions](#)
[Steelhead trout habitat in the San Lorenzo River video](#)

	Steelhead trout life cycle video Steelhead trout migration obstacle course instructions Migration visualization story River Model Instructions Hydrograph Guidance Steelhead trout migration and water level video Final Steelhead trout habitat drawing example Guiding question answer/explain video Watershed Ranger Pledge Recitation Watershed Ranger Certificate
Questions?	Click here for the Frequently Asked Questions Email Mollie Behn at mbehn@coastal-watershed.org